

## PATENT COOPERATION TREATY

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## PCT

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference TS 1181 PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/06114	International filing date (day/month/year) 06.06.2003	Priority date (day/month/year) 07.06.2002
International Patent Classification (IPC) or both national classification and IPC B01J35/02		
Applicant SHELL INTERNATIONALE RESEARCH MAATS... et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  30.12.2003	Date of completion of this report  16.09.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Holzwarth, A  Telephone No. +49 89 2399-7269 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/06114**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-20 as originally filed

**Claims, Numbers**

1-13 received on 01.09.2004 with letter of 01.09.2004

**Drawings, Sheets**

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-9,11
	No: Claims	10,12,13
Inventive step (IS)	Yes: Claims	1-9,11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1: WO 03 013725

D2: EP-A-0 428 223

D3: EP-A-0 510 770

**1. The present application does not meet the requirements of Article 6 PCT, in the following respects:**

**1.1** Claim 13 is a product by process claim which describes **an undefined mixture of per se known hydrocarbons**, because the products produced by the processes to which claim 13 refers (claim 11 and 12) yield different products depending on operation conditions. Therefore claim 13 is not acceptable.

**Therefore claim 13 is unclear contrary to the requirement of Art. 6 PCT.**

**2. The present application does not meet the requirements of Article 33 PCT, in the following respects:**

**2.1** The die-plate defined in claim 10 is not novel, since die-plates with the same shape are already known in the field of preparation of biscuits.

**Therefore the subject matter of claim 10 is not novel.**

**2.2** Since the mixture of hydrocarbons that result from the process of claim 11 and 12 is not defined (see also 1.1) no novelty can be established for the subject matter of claim 13 over the mixture of hydrocarbons disclosed in **D2** (page 6, line 40 - page 7, line 8).

**Therefore the subject matter of the claim 13 is not novel.**

**2.3** Although the subject matter of claim 11 maybe novel and inventive, this is not the case for the process of claim 12, that uses the mixture of hydrocarbons produced by the process of claim 11, since this **mixture of per se known hydrocarbon is not defined (see also 1.1 and 2.2)**, as it depends on operating conditions used for the process of claim 11 and the process of claim 12 is already disclosed in **D2** (page 6, line 40 - page 7, line 8).

**Therefore the subject matter of the claim 12 is not novel.**

**2.4 As can be deducted from the above (points 2.1 - 2.3) the present application does not meet the criteria of Article 33(1) PCT, because the subject matter of the claims 10, 12 and 13 is not novel in the sense of Article 33(2) PCT.**

**3. D1** is a patent application with a priority date before the priority date of the present application, but which was published after the priority date of the present application. D1 is therefore not directly relevant to the PCT phase, but it may become relevant in the later European or any national phase. D1 (Claim 1, 13, 14; figure 1; page 5, lines 1-5) discloses a shaped catalyst with the geometry as defined by claim 1. In D1 page 8, lines 18-24 it is mentioned that the catalyst can contain group VIII metals. From the application "hydrodesulphurisation" it is clear that the metals would be supported. Hydrodesulfurisation catalysts usually include either cobalt or nickel (see for example D1 page 2, lines 15-16). The particles in D1 (examples) are prepared by extrusion (claim 9) using a die-plate (claim 10). It is mentioned in D1 that hydroprocessing can be applied to paraffinic material from a Fischer-Tropsch Process (page 1, lines 1-12)

**Therefore D1 anticipates the subject matter of at least the claims 1, 9, 10, 12, 13.**

**4.1 D3** is considered as the closest prior art. D3 (page 3, lines 8-13; figures 1,2; claims 1-7, examples) discloses trilobal catalyst particles, formed by extrusion, having cross sections with the form of 3 intersected circles. The catalyst particles contain supported cobalt as an active component and are suitable for the Fischer-Tropsch process. The difference of claim 1 to the disclosure of D3 is the shape of the extruded particles. The applicant has shown in the examples that this shape has beneficial effects on the performance of the catalyst in the Fischer-Tropsch process.

**The subject matter of claim 1 and its dependant claims 2-8 can therefore be considered as novel in the sense of Art. 33(2) PCT and involves an inventive in the sense of Art. 33(3) PCT.**

**4.2 The subject matter of claim 9, which describes a process for preparation of the catalyst particles of claim 1-8 and the subject matter of claim 11, which describes a Fischer-Tropsch process using the catalyst particles of claim 1-8 can equally be considered as novel in the sense of Art. 33(2) PCT and involves an inventive in the sense of Art. 33(3) PCT.**